VPDES PERMIT FACT SHEET

This document gives pertinent Information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor**,** Municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260 et seq. The discharge results from the treatment of domestic sewage generated at the Virginia Department of Corrections (VA DOC) Haynesville Main Prison and Old Camp 17. This permit action consists of removing metals limitations and updating special conditions.

1. Facility Name and Address: Haynesville Correctional Center
   Physical: 650 Barnfield Road
   Haynesville, Virginia 22472
   Mailing: P.O. Box 129
   Haynesville, Virginia 22472

   SIC Code: 9223, Correctional Institutions

2. Permit No. VA0023469
   Existing Permit Expiration Date: February 8, 2016

3. Owner: Virginia Department of Corrections
   Contact Name: Timothy G. Newton
   Title: Environmental Services Director
   Telephone Number: (804) 887-8069
   Address: 6900 Atmore Drive
   Richmond, Virginia 23225

   Facility Contact Name: Dallas L. Phillips
   Title: Environmental Services Manager
   Telephone Numbers: (757) 514-3592
   Address: Virginia Dept. of Corrections, ERO
   1001 Obici Industrial Blvd., Suite F
   Suffolk, Virginia 23434

4. Application Complete Date: 05/14/2015
   Permit Drafted By: Brian Wrenn Date: 09/24/2015
   Piedmont Regional Office
   Reviewed By: Shawn Weimer Date: 10/16/2015
   Emilee Adamson Date: 11/29/2015

   Public Comment Period Dates: From: December 23, 2015
   To: January 25, 2016
   Publication in *Northern Neck News* Dates: December 23, 2015 & December 30, 2015

5. Receiving Stream Name: UT to Marshy Swamp
   River Mile: 3-XAR001.00
   Basin: Rappahannock
   Subbasin: NA
   Section: 2
   Class: III
   Special Standards: none

7-Day, 10-Year Low Flow:	0.00 MGD	1-Day, 10-Year Low Flow:	0.00 MGD
30-Day, 5-Year Low Flow:	0.00 MGD	Harmonic Mean Flow:	0.00 MGD
30-Day, 10-Year Low Flow	0.00 MGD		
Tidal?	NO	On 303(d) list?	NO

   The receiving stream is intermittent and, therefore, is expected to have zero low flows under permitted design conditions. Refer to Flow Frequency Memo in **Attachment A**.

6. Operator License Requirements: Class 2.

7. Reliability Class: Class I.

8. Permit Characterization:

( ) Issuance	(X) Existing Discharge
(X) Reissuance	( ) Proposed Discharge
( ) Effluent Limited	(X) Water Quality Limited
( ) Change of Ownership/Name	( ) Interim Limits in Permit
Effective Date:	( ) Interim Limits in Other Document (attached)
(X) Municipal	( ) Compliance Schedule Required
SIC Code(s): 9223, 4952	
( ) Industrial	( ) Discharge to 303(d) Listed Segment
SIC Code(s):	
(X) Publicly owned	( ) Site Specific WQ Criteria
( )PVOTW	( ) Federal
(X) State	

9. Discharge Description

Table I. Discharge Description

OUTFALL NUMBER	DISCHARGE SOURCE	TREATMENT	FLOW
001	Main Prison and Old Camp 17: 1,442 inmates and employees domestic sewage	Bar Screen, Influent Auger, Influent EQ, 4 Sequencing Batch Reactors (SBR) (includes sludge wasting), phosphorus removal, Tertiary Filtration, UV Disinfection, and cascade aeration. Aerobic Sludge Digestion, Dewatering in Drying Beds and filter press.	0.178 MGD

Refer to **Attachment B** for a facility diagram. The Virginia Department of Corrections (VA DOC) Haynesville Correctional Center previously operated the Oxidation Ditch at Old Camp 17 during the 2011 permit cycle. The treated effluent from this facility was combined with the SBR facility treated effluent and discharged through outfall 001. Internal outfalls were established in the previous permit cycle to monitor the individual outfalls. On August 22, 2011, the Oxidation Ditch at Old Camp 17 was decommissioned and a force main was installed between the two facilities to transport raw sewage influent from the existing Oxidation Ditch facility to the new SBR facility. Therefore, the internal outfalls are no longer needed and all monitoring has been assigned to outfall 001.

10. Sludge Use or Disposal: Sludge from the SBR Units is aerobically digested, dewatered in a filter press and drying beds and hauled to Southampton/Deerfield Correctional Center WWTP for blending with other biosolids. The biosolids are then land applied to VA DOC farm land. The biosolids are hauled in a covered, watertight vehicle from US Route 360 West → I-295 South → I-95 South → VA-40 East → State Road 735 South → VA-308 South.

11. Discharge Location Description: Topographic Map #146B: Haynesville. Refer to **Attachment C**.

12. Material Storage: Sodium hypochlorite, sodium aluminate, calcium hypochlorite, and polymer are stored under roof in such a manner as to prevent a discharge. Drums and containers are secured and stored separately with adequate ventilation and alarms that meet safety requirements.

13. Ambient Water Quality Information: Water quality data is not available for the UT to Marshy Swamp. The receiving stream is an intermittent tributary and would be expected to consist

entirely of effluent under critical low flow conditions; therefore, effluent data was deemed equivalent to stream data when evaluating permit limitations.

During the 2012 and draft 2014 305(b)/303(d) Integrated Water Quality Assessment Reports, the receiving stream was not assessed for any of its designated uses. It was therefore considered a Category 3A water ("No data are available within the data window of the current assessment to determine if any designated use is attained and the water was not previously listed as impaired.")

This facility discharges directly to an unnamed tributary to Marshy Swamp. The receiving stream ultimately discharges to Totuskey Creek, for which a TDML was approved by the EPA on February 19, 2010. This discharge was addressed in the "Totuskey and Richardson Creek TMDL Report for Shellfish Condemnation Areas Listed Due to Bacteria Pollution." The facility received a fecal coliform WLA of 2.93 E+10 MPN/year and an enterococci WLA of 7.33 E+10 cfu/year. However, it was later determined that the shellfish use does not exist in Totuskey Creek, so the TMDL was modified on 9/21/10 (approved by EPA) to remove the Fecal coliform WLA. The facility was ultimately assigned an enterococci wasteload allocation of 2.38E+08 cfu/day based on a permit limit of 35 cfu/100 mL and a design flow of 0.178 MGD. An interim fecal coliform allocation of 1.35E+09 MPN/day was assigned to Haynesville using DEQ's track and roll modification procedure; the TMDL modification states that the existing bacterial limits can be used to demonstrate compliance with the fecal coliform WLA. This permit has a limitation of 35 N/100 mL for enterococci that is in compliance with the TMDL.

The Upper Rappahannock River Watershed Shellfish TMDL was approved by the EPA on 8/10/10 and by the SWCB on 12/30/10. It was subsequently modified on 8/4/11. The correctional center received a fecal coliform wasteload allocation of 1.35E+09 MPN/day; existing bacterial limits can be used to demonstrate compliance with the fecal coliform WLA.

UT to Marshy Swamp is in the Chesapeake Bay watershed. The receiving stream has been addressed in the Chesapeake Bay TMDL, approved by EPA on December 29, 2010. The TMDL addresses dissolved oxygen (DO), chlorophyll a, and submerged aquatic vegetation (SAV) impairments in the main stem Chesapeake Bay and its tidal tributaries by establishing non-point source load allocations (LAs) and point-source waste load allocations (WLAs) for Total Nitrogen (TN), Total Phosphorus (TP) and Total Suspended Solids (TSS) to meet applicable Virginia Water Quality Standards contained in 9VAC25-260-185. This facility is considered a Significant Chesapeake Bay wastewater discharge, and has been assigned a TN WLA of 2,802 pounds per year, a TP WLA of 210 pounds per year, and a TSS WLA of 21,014.364 pounds per year.

Implementation of the Chesapeake Bay TDML is currently accomplished in accordance with the Commonwealth of Virginia's Phase I Watershed Implementation Plan (WIP), approved by EPA on December 29, 2010. The approved WIP recognizes that the TMDL nutrient WLAs for Significant Chesapeake Bay wastewater dischargers are set in two regulations: 1) the Water Quality Management Planning Regulation (9VAC25-720); and 2) the "General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed of Virginia" (9VAC25-820). The WIP further outlines that since TSS discharges from wastewater facilities represent an insignificant portion of the Bay's total sediment load, they may be considered in the aggregate. The WIP also states that wastewater discharges with technology-based TSS limits are considered consistent with the TMDL.

40 CFR 122.44(d)(1)(vii)(B) requires permits to be written with effluent limits necessary to meet water quality standards and to be consistent with the assumptions and requirements of applicable WLAs. DEQ has provided coverage under the VPDES Nutrient General Permit (GP) for this facility under permit VAN020044. The requirements of the Nutrient GP currently in effect for this facility are consistent with the Chesapeake Bay TMDL. This

individual permit includes TSS limits of 15 mg/L. This limit is more stringent than the technology-based limitation and is in compliance with the Chesapeake Bay TMDL and WIP.

In addition, the individual permit has limits of 15 mg/L BOD_5, 3.0 mg/L TKN, and 5.5 mg/L DO which provide protection of instream DO concentrations to at least 5.0 mg/L. However, implementation of the full Chesapeake Bay WIP, including GP reductions combined with actions proposed in other source sectors, is expected to adequately address ambient conditions such that the proposed effluent limits of this individual permit are consistent with the Chesapeake Bay TMDL, and will not cause an impairment or observed violation of the standards for DO, chlorophyll a, or SAV as required by 9VAC25-260-185.

14. Antidegradation Review & Comments:
Tier: 1 X 2_____ 3_____

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters. The limitations in this permit were developed in accordance with § 303(d)(4) of the Clean Water Act. Therefore, antidegradation restrictions do not apply.

The antidegradation review begins with a Tier determination. The unnamed tributary to the Marshy Swamp is determined to be a Tier 1 waterbody. This determination is based on the intermittent nature of the stream where beneficial uses cannot be fully attained. See **Attachment A**.

15. Site Visit: Date: 9/11/2015 Performed by: Brian Wrenn
See **Attachment D**.

16. Effluent Screening & Limitation Development:
See **Attachment E** for effluent data from the facility, including the most recent water quality criteria analyses, a DMR data summary and application data summary. See **Attachment F** for documents pertaining to the effluent limitation development, including the Stream Sanitation Memo, MSTRANTI Data Source Report, and printouts of the MSTRANTI (version 2b) and STATS.EXE (version 2.04) results.

Conventional Pollutants

5-Day Biochemical Oxygen Demand (BOD_5), Dissolved Oxygen (DO), Total Suspended Solids (TSS): These conventional limitations are assigned based on the modeling memo dated March 18, 1999. See **Attachment F**. The model assigned a Carbonaceous Biochemical Oxygen Demand ($cBOD_5$) limitation of 15 mg/L. However, the 2005 permit assigned a BOD_5 limitation of 15 mg/L, which is more stringent than an equivalent $cBOD_5$ limitation. This limit was also carried forward in the 2011 permit. To avoid backsliding the BOD_5 limitation of 15 mg/L will be carried forward in this reissuance. Permit writer judgment is used to assign a TSS limitation equal to the $cBOD_5$ limitation assigned in this memo. The model also suggests a Total Kjeldahl Nitrogen (TKN) limitation of 3.0 mg/L. This limit was not included in the 2005 or 2011 permit due to ammonia limitations of 0.32 mg/L monthly average and 0.43 mg/L weekly average. Ammonia comprises 40-60% of TKN, and a monthly average ammonia limitation of 0.32 mg/L was considered protective of TKN. Subsequently, the TKN limitation was removed from the permit. However, the January 20, 1994 model required a TKN of 3.0 mg/L to meet the water quality standard for dissolved oxygen instream. DEQ modeling procedures assume that 3.0 mg/L of TKN is refractory and cannot be removed through typical treatment processes. The nitrogenous biochemical oxygen demand in the model is calculated by the equation below:

Nitrogenous Biochemical Oxygen Demand (nBOD) = TKN limit – 3.0 mg/L

Therefore, a TKN limit of 3.0 mg/L equates to a nBOD of 0 mg/L. This calculation is also included in GM00-2011 and is based on the language from the 1987 A. J. Anthony memorandum "Advisory Notification of Effluent Limits for Swamp and Marsh Waters", which states that:

"…TKN – We are recommending that unoxidized nitrogen be removed in the treatment plant. The recommended limit on TKN recognizes that a normal domestic effluent usually contains 2-3 mg/L TKN that is refractory and cannot be removed by biological treatment…The intent of our recommendation is to remove all biologically oxidizable nitrogen compounds from the effluent."

Without a TKN limitation of 3 mg/L, the permit would allow an average monthly ammonia concentration of 0.32 mg/L in the discharge, which would equate to almost 1 mg/L of oxidizable TKN. This is inconsistent with the results of the model which required 0 mg/L of oxidizable TKN. For this reason, the TKN limitation of 3.0 mg/L is required in the 2016 permit.

As a result, the reasonable potential analysis for ammonia was conducted using an assumed concentration of 3.0 mg/L per recommendations in GM00-2011. The ammonia concentration calculated using STATS.exe is less stringent than the limitation applied in the 2005 permit reissuance and subsequently, in the 2011 permit. Consequently, the 2005 limitation is carried forward to prevent backsliding. The 2005 reasonable potential analysis was based on ammonia wasteload allocations carried to only two significant digits. As a result, the 2005 limitation applied in this permit only has two significant digits.

pH: 9 VAC 25-260-50 of the VA Water Quality Standards outlines numerical criteria for pH in Class III waters between 6.0 SU and 9.0 SU.

E. coli: 9VAC 25-260-170 of the VA WQS establishes bacteria limitations for freshwater receiving streams.

Enterococci: This discharge was addressed in the "Totuskey and Richardson Creek TMDL Report for Shellfish Condemnation Areas Listed due to Bacteria Pollution," which was approved by the EPA on February 19, 2010. The facility received an enterococci WLA of 7.33 E+10 N/100 mL based on a permit limit of 35 N/100mL. Consequently, a limitation is required for the permit to be issued in accordance with the TMDL. As noted above, the facility discharges to a freshwater receiving stream, for which the bacteria standard is expressed in terms of *E. coli*. *E. coli* is monitored 3 days/Week to demonstrate adequate disinfection. Consequently, it is the permit writer's judgment to require enterococci monitoring of 4/Month in accordance with a standard based on a 4 sample geometric mean. In addition, the facility was named in the Upper Rappahannock River Watershed Shellfish TMDL approved by the EPA on 8/10/10 and by the SWCB on 12/30/10. It was subsequently modified on 8/4/11. The correctional center received a fecal coliform wasteload allocation of 1.35E+09 MPN/day; existing bacterial limits can be used to demonstrate compliance with the fecal coliform WLA.

Reasonable Potential Evaluation

If it is determined that a specific pollutant may exist in a permittee's effluent, a Reasonable Potential Analysis (RPA) must be conducted in order to determine if it is statistically probable that the facility's discharge may cause or contribute to a violation of the in-stream acute and chronic criteria contained in the *Virginia Water Quality Standards* (9VAC 25-260 et.seq.) for that pollutant. The first step of the analysis is determining the maximum concentration that may exist at the boundary of the facility's mixing zone which will maintain the abovementioned criteria, also called a wasteload allocation (WLA). The WLA is calculated in a DEQ spreadsheet called MSTRANTI, which requires receiving stream and effluent data for flow, water quality, and effluent mixing during critical low flow conditions. The second step of the analysis requires inserting the acute and chronic WLAs and

pollutant concentration data submitted by the permittee into another computer application called STATS. Based on the entered effluent data, STATS calculates the daily, 4-day, and/or 30-day 97th percentiles from the lognormal distribution and compares them to the WLAs. If the 97th percentiles exceed the WLAs, then there is Reasonable Potential that future discharges may cause violations of the Water Quality Standards, and a pollutant specific effluent limitation is deemed to be necessary. This limitation is calculated by STATS based on EPA-guidelines for the control of toxic pollutants.

Numeric permit limitation calculations utilize conservative low flow ambient conditions to represent circumstances in which the effluent has the greatest potential to impact the receiving stream. Because the receiving stream is intermittent, the stream consists entirely of effluent during low flow conditions. Therefore, one hundred percent mixing and stream characteristics equal to the effluent were inserted in the MSTRANTI spreadsheet to calculate the maximum wasteload allocations (WLAs) that maintain WQS in the receiving stream.

The DOC submitted data results for all parameters in the VA WQS. Measureable concentrations of the pollutants listed in Table 1 below were observed in the effluent. All other pollutants analyzed were less than an acceptable QL. The pollutants which have an Aquatic Water Quality Standard were evaluated for reasonable potential using STATS.exe. The results of these analyses are included in **Attachment F** and summarized in the table below. Pollutants that demonstrate reasonable potential to violate WQS are assigned a limitation based on the results of STATS.exe. Total Recoverable cadmium, silver, copper, and zinc data has been reported on the DMRs for the 2011 permit cycle. Total recoverable data was used in addition to the dissolved data in effluent limitation development in an effort to be as conservative as possible.

Monitoring: GM14-2003 recommends sample type and frequency for categories of parameters based on the design flow of the facility. For toxic parameters at this facility, the following sample types are appropriate: 1/8H, 8HC or Grab. The 2011 permit assigned 8HC samples, which will be carried forward in this reissuance.

TRC: Chlorination is used at the facility as a back up to the UV disinfection process. Chlorine is a toxic pollutant and per GM00-2011, a chlorine limitation was forced using a datum of 20,000 µg/L.

Cadmium, Copper, Silver, and Zinc: Cadmium and silver were originally included in the 2005 permit reissuance and carried forward in the 2011 reissuance. The original limitation development was based off of single grab samples as part of the application process. All analyses conducted for cadmium and silver since that time have resulted in <QL values.

Copper and zinc were granted compliance schedules in the 2011 permit reissuance to meet more stringent concentration limitations. The final limitations in the 2011 permit were based on acute toxicity.

Since the 2011 reissuance, Haynesville CC has made significant changes to the WWTP and to the influent characteristics. The WWTP was upgraded in 2011 by installing improved primary and sludge treatment and nutrient reduction technology. In addition, an influent hardness pilot study was conducted in 2013. This study examined the effects on copper and zinc concentrations in the WWTP's effluent as a result of a calcium carbonate ($CaCO_3$) feed installed at the water supply Well-house for the Haynesville CC. The results showed that with higher total hardness concentrations (>80 mg/L), copper and zinc concentrations dropped significantly. The $CaCO_3$ feed was permanently installed and effluent copper and zinc concentrations have continued to be significantly lower.

These improvements are considered material and substantial alterations to the facility and information that was not available at the time of the 2011 permit reissuance. These conditions qualify the facility for less stringent limitations or removal of limitations in accordance with 9VAC25-31-220.L.2 (see item 17 for further discussion).

As stated above, cadmium and silver concentrations reported on the DMRs have all been below the QLs. Therefore, the cadmium and silver limits have been removed. The RPAs for copper and zinc were conducted using DMR data submitted after the installation of the calcium carbonate feed. Because zinc monitoring was not required to be reported until April of 2015, the data set only includes 6 sample results including the results from the application data (March 24, 2015). The STATS analyses for copper and zinc indicate no limits were necessary to meet water quality standards.

Separate human health (HH) standards apply to waters that are designated as "Public Water Supplies (PWS)" and "all other surface waters." The receiving stream is not designated as a PWS; consequently, the HH (PWS) standards are not applicable to this discharge. Nickel and zinc are the only pollutants with applicable human health standards. As shown in Table 1 below, the nickel and zinc HH WLAs are at least three orders or magnitude greater than the observed concentration; therefore, reasonable potential to exceed the HH WLA does not exist.

Table 1 - Summary of Observed Pollutant Reasonable Potential Analyses

Parameter	Effluent Concentration	Aquatic WLA		HH WLA	Reasonable Potential
		Acute	Chronic		
Ammonia (mg/L)	3	4.71	0.551	--	YES
Copper (µg/L)	1.78, DMR data*	12	7.9	--	NO
Chloride (µg/L)	101	860,000	230,000	--	NO
Nickel (µg/L)	0.54	160	18	4,600	NO
TRC (µg/L)	20,000	19	11	--	YES
Zinc (µg/L)	14.7, DMR data*	100	100	26,000	NO

*Only DMR data submitted after the $CaCO_3$ installation was used in the RPA.

Nutrients

Annual average TN and TP: Nutrient concentrations are assigned based on the design performance of installed nutrient removal technology (See Table 2). In the 2011 permit, these limitations were assigned to Outfall 102, which represented the treated effluent from the SBR facility. Because the Nutrient General Permit (GP) for Haynesville addresses effluent at Outfall 001, the monitoring required for the GP could not be used to calculate calendar year and year-to-date concentrations for Outfall 102 in the Individual Permit. Consequently, monitoring for Total Nitrogen and Total Phosphorus were required for this internal outfall. However, the Oxidation Ditch at Old Camp 17 has been decommissioned, all internal outfalls have been eliminated, and all influent goes through the SBR facility and discharges through outfall 001. Therefore, the monitoring required in the GP can be used to calculate the nutrient calendar year and year-to-date concentrations and all other nutrient monitoring for TN and TP are eliminated in this reissuance.

The Waste Load Allocations assigned in 9VAC25-720-70 are 2,802 pounds per year and 210 pounds per year of Total Nitrogen and Total Phosphorus, respectively. At the current design flow, the SBR facility, operated to meet the design concentration limitations, will meet the annual WLA.

Table 2 - Effluent Limitations Summary for Outfall 001

CEDS Code	PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	WEEKLY AVERAGE	MIN	MAX	FREQ	SAMPLE TYPE
001	Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
002	pH (SU)	1	NA	NA	6.0	9.0	1 per Day	Grab

CEDS Code	PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
			MONTHLY AVERAGE	WEEKLY AVERAGE	MIN	MAX	FREQ	SAMPLE TYPE
003	BOD_5 (mg/L)	3	15	23	NA	NA	3 Days per Week	8 HC
004	TSS (mg/L)	3	15	23	NA	NA	1 per Month	8 HC
005	TRC (µg/L)	2	7.4	8.4	NA	NA	3 per Day @ 4 Hour Intervals	Grab
007	Dissolved Oxygen (mg/L)	4	NA	NA	5.5	NA	1 per Day	Grab
039	Ammonia – N (mg/L)	2	0.32	0.43	NA	NA	1 per Month	8 HC
068	TKN (mg/L)	4	3.0	4.5	NA	NA	3 Days per Week	8 HC
120	*E. coli* (N/100mL)	1	126	NA	NA	NA	3 Days per Week 10am-4pm	Grab
140	Enterococci (N/100mL)	2	35	NA	NA	NA	4 per Month 10am-4pm	Grab
792	Total Nitrogen-Annual Average (mg/L)	5	4.0	NA	NA	NA	1 per Year	Calculated
794	Total Phosphorus-Annual Average (mg/L)	5	0.30	NA	NA	NA	1 per Year	Calculated
805	Total Nitrogen- Year to Date (mg/L)	5	NL	NA	NA	NA	1 per Month	Calculated
806	Total Phosphorus-Year to Date (mg/L)	5	NL	NA	NA	NA	1 per Month	Calculated

1. Water Quality Standards
2. Water Quality-based
3. Permit Writer's Judgment (PWJ)
4. Stream Sanitation Model
5. 9VAC25-40-70.A

17. Antibacksliding Statement: All limitations are as stringent as the 2011 permit except for cadmium, silver, copper, and zinc. In 2012, the facility was significantly upgraded to include improved primary treatment, enhanced sludge treatment, and the installation of nutrient removal technology. In addition, a calcium carbonate feed was installed at the facility's water supply Well-house. This raised the hardness of the water supply which lowered the metals concentrations at the WWTP.

    9VAC25-31-220.L.2.a provides an exception for less stringent limitations on the basis of "Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation." The upgrades to the facility justify the less stringent limitations under this exception.

    Furthermore, 9VAC25-31-220.L.2.b, allows less stringent limitations if "Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance." The installation of the calcium carbonate feed at the water supply facility raised the hardness levels of the influent. Had the elevated hardness levels been used in the previous RPAs, limitations

would not have been required. Therefore, all metals limitations have been removed from this permit.

18. Compliance Schedules: No compliance schedules are included in this permit reissuance.

19. Special Conditions:

a. B.1. Additional Chlorine Limitations and Monitoring Requirements
Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC25-790 and Virginia Water Quality Standards 9VAC 25-260-170, Bacteria; other recreational waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.

b. C.1. 95% Capacity Reopener
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 4 for all POTW and PVOTW permits.

c. C.2. Indirect Dischargers
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 1 and B 2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

d. C.3. CTC, CTO Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790. 9 VAC 25-40-70.A authorizes DEQ to include technology-based annual concentrations limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.

e. C.4. O&M Manual Requirement
Rationale: Required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E.

f. C.5. Licensed Operator Requirement
Rationale: The VPDES Permit Regulation, 9VAC25-31-200 C and the Code of Virginia § 54.1-2300 et seq, Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.), require licensure of operators.

g. C.6. Reliability Class
Rationale: Required by Sewage Collection and Treatment Regulations, 9VAC25-790 for all municipal facilities.

h. C.7. Total Maximum Daily Load (TMDL) Reopener
Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

i. C.8. Materials Handling and Storage
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

j. C.9. Compliance Reporting
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. This condition also establishes protocols for calculation of reported values. Metals QLs are the greater of the target values from MSTRANTI or the Agency established minimum QLs from the current VPDES Permit Manual (GM10-2003).

k. C.10. Sludge Use and Disposal
Rationale: VPDES Permit Regulation, 9VAC25-31-100 P; 220 B 2; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

l. C.11. Sludge Reopener
Rationale: Required by VPDES Permit Regulation, 9VAC25-31-220 C for all permits issued to treatment works treating domestic sewage.

m. C.12. Nutrient Reopener
Rationale: 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.

n. C.13. Nutrient Reporting Calculations
Rationale: § 62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations (as opposed to annual loads) are limited in the individual permit, this special condition is intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

o. C.14. Suspension of Concentration Limits for E3/E4 Facilities
Rationale: 9 VAC 25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

p. C.15. Treatment Works Closure Plan
Rationale: Code of Virginia § 62.1-44.19 of the State Water Control Law. This condition establishes the requirement to submit a closure plan for the wastewater treatment facility if the treatment facility is being replaced or is expected to close.

q. Part II. Conditions Applicable to All Permits
Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

20. Changes to Permit:

Cover Page			
Information	Change		Rationale
	From	To	

Owner Name	Department of Corrections	Virginia Department of Corrections	Revised to reflect official name of owner, per CEDS.
Facility Name	Haynesville Correctional Facility	Haynesville Correctional Center	Revised to reflect official name of facility, per CEDS.
Facility Location	VSH 650 Barnfield Road, Haynesville, VA 22472	650 Barnfield Road, Haynesville, Virginia 22472	Revised to reflect application.
Signature Title	Water Permit Manager	Planning and VPDES Permit Manager	Revised to reflect current title.

Part I.A					
Part I.A.1 Outfall 001					
Parameter	Effluent Limits		Monitoring Requirement		Reason
	From	To	From	To	
012 – Total Phosphorus	2.0 mg/L	----	2 per Month	----	Technology-based nutrient concentration limitations have replaced this limitation. See Item 16.
039 – Ammonia as N Monthly Avg/ Weekly Avg	0.32/0.43	No change	3 Days per Week	1 per Month	Monitoring frequency changed to reflect toxics monitoring frequency guidance in accordance with GM14-2003.
068 – TKN Monthly Avg/ Weekly Avg	----	3.0/4.5	----	3 Days per Week	Based on stream sanitation model and recommendation from senior water planning staff. See Ammonia and TKN discussion in item 16.
186 – Total Recoverable Silver Monthly Avg/ Weekly Avg	0.49 µg/L	----	1/Month	----	See Items 16 and 17. RPA demonstrated no need for a limitation.
196 - Total Recoverable Zinc Monthly Avg/ Weekly Avg	36 µg/L	----	1/Month	----	See Items 16 and 17. RPA demonstrated no need for a limitation.
202 – Total Recoverable Cadmium Monthly Avg/ Weekly Avg	0.67 µg/L	----	1/Month	----	See Items 16 and 17. RPA demonstrated no need for a limitation.
203 –*Interim* Total Recoverable Copper Monthly Avg/ Weekly Avg	4.6 µg/L	----	1/Month	----	See Items 16 and 17. RPA demonstrated no need for a limitation.
203 –*Final* Total Recoverable Copper Monthly Avg/ Weekly Avg	3.6 µg/L	----	1/Month	----	See Items 16 and 17. RPA demonstrated no need for a limitation.
792	----	4.0 mg/L	----	1 per Year	See Item 16. Internal outfall

Part I.A					
Part I.A.1 Outfall 001					
Parameter	Effluent Limits		Monitoring Requirement		Reason
	From	To	From	To	
Total Nitrogen- Annual Average					102 was eliminated and the point of compliance for all pollutants is Outfall 001.
794 Total Phosphorus- Annual Average	----	0.3 mg/L	----	1 per Year	See Item 16. Internal outfall 102 was eliminated and the point of compliance for all pollutants is Outfall 001.
805 Total Nitrogen- Year to Date	----	NL	----	1 per Month	See Item 16. Internal outfall 102 was eliminated and the point of compliance for all pollutants is Outfall 001.
806 Total Phosphorus- Year to Date	-----	NL	----	1 per Month	See Item 16. Internal outfall 102 was eliminated and the point of compliance for all pollutants is Outfall 001.

From	To	Outfall	Change	Reason
Part I.A.2.	.----	Outfall 101	Deleted	In 2011 the Oxidation Ditch at Old Camp 17 was decommissioned. A pump station was installed and all influent to Old Camp 17 was routed to the SBR facility. As a result the compliance point for all pollutants is at outfall 001.
Part I.A.1.3	----	Outfall 102	Deleted	

Part I. Special Conditions				
From	To	Special Condition	Change	Reason
Part I.A.1.a (Definitions)	Part I.A.1.a (Definitions)	Definitions	Removed “2 per Month”	No monitoring frequencies of 2 per Month included in the permit.
Part I.A.1.a(1)	Part I.A.1.a(1)	Design Flow	Combined flows of outfalls 001 and 101.	With the closure of Old Camp 17, the influent flows were combined and routed to the upgraded SBR facility.
Part I.A.1.a(4)	----	Schedule of Compliance	Removed	No schedule of compliance was included in this permit.
----	Part I.A.1.a(4)	Nutrient Reporting	Added	To provide clarification on the nutrient concentration calculation requirements.
Part I.A.1.d	----	Sampling Location	Deleted	All internal outfalls have been removed. The point of compliance is at outfall 001.
Part I.A.1.e	Part I A.1.d	Nutrient Loading Requirements under VAN020044	Revised	Language revised to reflect current guidance.

Part I. Special Conditions				
From	To	Special Condition	Change	Reason
Part I.B.	Part I.B.	Additional Limitations and Monitoring Requirements	Revised language and updated TRC limitations.	In accordance with GM 14-2003.
Part I.C.	----	Compliance Schedule	Removed	No compliance schedule is included in this permit.
Part I.D.1	Part I.C.1	95% Capacity Reopener	Revised language	In accordance with GM 14-2003.
Part I.D.2	Part I.C2	Indirect Dischargers	Revised language	In accordance with GM 14-2003.
Part I.D.3	Part I.C.3	CTC, CTO Requirement	Revised language	In accordance with GM 14-2003.
Part I.D.4	Part I.C.4	O&M Manual	Revised language	In accordance with GM 14-2003.
Part I.D.5	Part I.C.5	Licensed Operator Requirement	Revised language	In accordance with GM 14-2003.
Part I.D.7	Part I.C.7	Total Maximum Daily Load (TMDL) Reopener	Revised language	In accordance with GM 14-2003.
Part I.D.8	Part I.C.8	Materials Handling and Storage	Revised language	In accordance with GM 14-2003.
Part I.D.9	Part I.C.9	Compliance Reporting	Revised language	In accordance with GM 14-2003.
Part I.D.15	----	Water Quality Criteria Monitoring	Deleted	Sufficient monitoring data has been submitted to characterize the effluent from the new SBR facility.
Part I.D.16	Part I.C.15	Treatment Works Closure Plan	Revised language	In accordance with GM 14-2003.

Part II.	Part II.	Conditions Applicable To All VPDES Permits	Revised language	In accordance with GM 14-2003.

22. Variances/Alternate Limits or Conditions: None

23. Public Notice Information required by 9VAC25-31-280 B:
Comment period: Publishing Newspaper: *Northern Neck News*
Publication Dates: December 23 and 30, 2015
Start Date: December 23, 2015 End Date: January 25, 2016

All pertinent information is on file and may be inspected, and copied by contacting Brian Wrenn at Virginia DEQ-Piedmont Regional Office, 4949-A Cox Road, Glen Allen VA 23060, (804) 527-5015, e-mail Brian.wrenn@deq.virginia.gov; Fax: 804/527-5106.

DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant

and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment or may request copies of the documents from the contact person listed above.

24. Additional Comments:

Previous Board Action: The facility operated under an Executive Compliance Agreement (ECA) from March 8, 2004 until March 8, 2014, due to noncompliance with Ammonia and Copper limitations. The SBR facility upgrades, completed August 22, 2011, and the $CaCO_3$ feed at the Haynesville water supply well eliminated the need for the ECA.

Staff Comments:

- The facility is not eligible for reduced monitoring because it has been under an ECA within the last three years.
- A Certificate to Operate was issued to the Department of Corrections August 28, 2015 for the Haynesville CC WWTP upgrade. See **Attachment G** for a copy of the CTO and the upgrade design standards.
- The applicant submitted a waiver request on April 10, 2015. The submission requested the removal of cadmium and silver limitations, a reduction in monitoring frequencies for BOD_5 and ammonia, and a relaxation or removal of the copper and zinc limitations. All of the requests are addressed through standard reissuance procedures. No waiver memo was developed for the request. A discussion of the removal of the cadmium, silver, copper, and zinc limitations can be found in Items 16 and 17. The reduced monitoring frequency discussion can be found in the Staff Comments above.
- Annual permit maintenance fees have been paid. The last payment was deposited October 29, 2015.
- EPA has waived the right to comment on the draft permit.
- This project is not controversial.
- The discharge is in conformance with the existing planning documents for the area.
- The proposed limitations will maintain Water Quality Standards.
- This facility is an E2 VEEP participant.
- The permittee has been an eDMR participant since April 2008.

Other Agency Comments:

- DEQ submitted a request for comments on the reissuance application to VDH-ODW on May 20, 2015. No comments were received regarding the application. See **Attachment H**.
- Coordination with VDH-DSS is not necessary because the discharge is not to shellfish waters.

Owner Comments: Owner comments and DEQ responses can be found in **Attachment I**.

Public Comment: No comments were received.

Attachments:
A. Flow Frequency Memo
B. Site Diagram
C. Topographic Map
D. Site Inspection Report
E. Effluent Data
F. Effluent Limitation Development
G. CTO
H. Other Agency Comments
I. Owner Comments and DEQ Responses

Attachment A

Flow Frequency Memo

Attachment B

Site Diagram

Attachment C

Topographic Map:

Attachment D

Site Inspection Report

(Date)

Attachment E

Effluent Data:

DMR Data
Application Data
Water Quality Criteria Monitoring Form

Attachment F

Effluent Limitation Development:

Modeling Memo
MSTRANTI Data Source Report
MSTRANTI
STATS.exe

Attachment G

CTO

Attachment H.

Other Agency Comments

Attachment I

Owner Comments and DEQ Responses